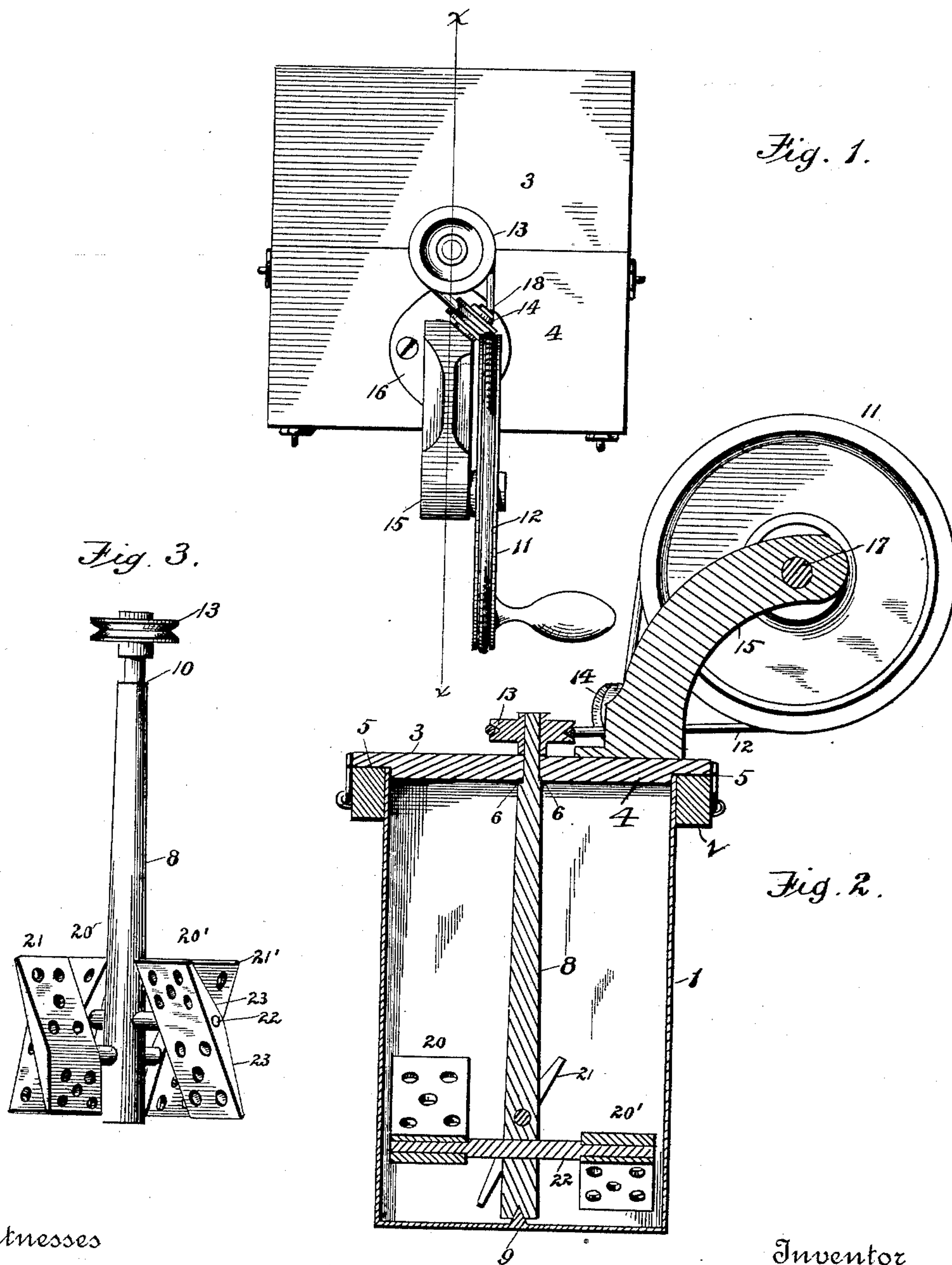


(No Model.)

A. V. STEWART.  
CHURN.

No. 468,158.

Patented Feb. 2, 1892.



Witnesses

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# UNITED STATES PATENT OFFICE.

ABSALOM V. STEWART, OF HOPKINS, MISSOURI.

## CHURN.

SPECIFICATION forming part of Letters Patent No. 468,158, dated February 2, 1892.

Application filed July 6, 1891. Serial No. 398,543. (No model.)

*To all whom it may concern:*

Be it known that I, ABSALOM V. STEWART, a citizen of the United States, residing at Hopkins, in the county of Nodaway and State of Missouri, have invented certain new and useful Improvements in Churns; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in churns; and the novelty consists of the construction and arrangement of parts which will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a top plan view. Fig. 2 is a vertical sectional view on the plane indicated by the dotted line *xx* of Fig. 1, and Fig. 3 is a detail perspective view of the dasher.

Like numerals of reference denote corresponding parts in all the figures of the drawings.

1 designates the churn, vessel, or receptacle of any suitable form and size. The upper open end or mouth of the vessel is provided with a surrounding flange 2, and in this flanged mouth is fitted a cover consisting of two sections 3 4, the edges of said cover being recessed or grooved at 5 to enable the cover to fit in the flanged mouth and rest on the top thereof, as shown in Fig. 2. In the opposing edges of the cover-sections are formed recesses 6, which coincide with each other and provide an opening for the passage of the upper end of the dasher-staff 8. The lower end of this dasher-staff is supported in the vessel or receptacle 1 by an ordinary step-bearing 9, while the upper end of said staff is formed with rigid collars or flanges 10, which engage with the cover and operate to hold the dasher-staff against vertical displacement, the dasher-staff being thus journaled firmly in place.

To rotate the dasher-staff continuously in one direction and secure considerable speed and power with a minimum exertion by the operator, I resort to the novel form of driving-gear shown in Figs. 1 and 2 of the drawings. This power consists, essentially, of a driving-wheel 11, an endless belt 12, a staff-pulley 13, and a diagonal guide-pulley 14, intermediate of the driving-pulley and the staff-pulley.

The driving and guide pulleys are supported by or journaled on a common standard 15, which is securely bolted to one section 4 of the cover. This standard is cast or formed of a single piece of metal and provided with a perforated flange or base 16, through the perforations in which are passed the screws or bolts which fasten the standard to the cover. The standard is curved or arched longitudinally to bring its upper extremity at one side of the median line of the sectional cover, and in the upper end of said standard is journaled a horizontal shaft 17, to one end of which is rigidly secured the large driving-wheel 11. To the standard near its base or lower end is secured or fixed in any suitable manner a stud or axle 18, and on this axle is loosely fitted the guide-pulley. Said stud or axle lies diagonally or in an inclined position relatively to the shaft 16, and the guide-pulley assumes substantially the same diagonal position to the large driving-wheel in order to properly and effectively guide the belt from the driving-wheel to the pulley 13 on the dasher-staff. The driving-wheel, the staff-pulley, and the intermediate diagonal guide-pulley are provided with grooves in their peripheries, and the endless belt passes around the drive-pulley down beneath and in contact with the intermediate guide-pulley, thence to and around the staff-pulley 13, and thence directly to the large drive-pulley below the guide-pulley, but not in contact with the same.

The driving mechanism is simple and effective in operation, and the whole drive means are arranged over and supported by the section 4 of the cover so that it is out of the way of the section 3, which can be readily removed to permit access to the churn without disturbing the driving mechanism or the latter interfering with such adjustment of the cover-section 3. I also employ a novel form of dasher, which operates to create rapid whirling motions to the contents of the receptacle or vessel.

The dasher consists of a multiplicity of blades 20 20' and 21 21', preferably four in number and arranged in two pairs. The pairs 20 20' are on opposite sides of the staff in substantially the same horizontal plane, and they are secured to the staff by a common



bolt or stud 22. The blades 20 20' are each formed on their working surfaces with two bevels 23, arranged reversely to each other, the one bevel being above the center of the blade  
5 and the other below its center, and the dashers are arranged diagonally to the axis of the staff, the one dasher being inclined in one direction and the other inclined in the reverse direction to the axis of the staff. The other  
10 pair of dashers 21 21' are similarly constructed with the bevels on their working faces and arranged relatively to the axis of the dasher-staff, in the manner herein described, and said dasher-blades operate to  
15 create upward whirling currents of the cream, which rise to the top of the vessel and sweep around the sides thereof, and thence descend centrally in the vessel around the staff and above the dashers, where there is less agitation. The dasher-blades are suitably perforated for the passage of cream through the  
20 same. The cover-sections can be fastened to the vessel by hooks or other suitable catches.

The operation of my invention is obvious  
25 from the foregoing description, taken in connection with the drawings.

I am aware that changes in the form and proportion of parts and details of construc-

tion can be made without departing from the spirit of my invention.

What I claim as new is—

The improved churn herein described, comprising a receptacle, a sectional cover thereon, a dasher-staff 8, having the perforated inclined blades united by the short studs to the  
35 lower end thereof and having all their working surfaces facing in the same direction and the horizontal pulley 13 on its upper end, the arched single standard 15, fixed to one section of the cover and having at the base thereof the stud 18, which lies at an angle to the  
40 shaft 17, journaled in the upper end of the standard, the belt-wheel 11 on said shaft 17, the diagonal pulley 14, carried by the stud 18 and arranged at a tangent to the faces of the  
45 pulley 13 and belt-wheel 11, and the continuous belt 12, passing around the belt-wheel and pulley 13 and below the guide-pulley 14, all arranged and combined substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

ABSALOM V. STEWART.

Witnesses:

B. F. GOODSON,  
HUGH DODD.